

Field name	Value	Explanation
PTI (Payload Type Identifier)	100	Client management frame
PFI (Payload FCS Identifier)	0	No payload FCS
EXI (Extension Header Identifier)	0000	Null Extension Header Type
UPI (User Payload Identifier)	0000 0001	Client line fault (LOS)
	1000 0000	Client line fault (Link-down)

FIG. 1 (BACKGROUND ART)

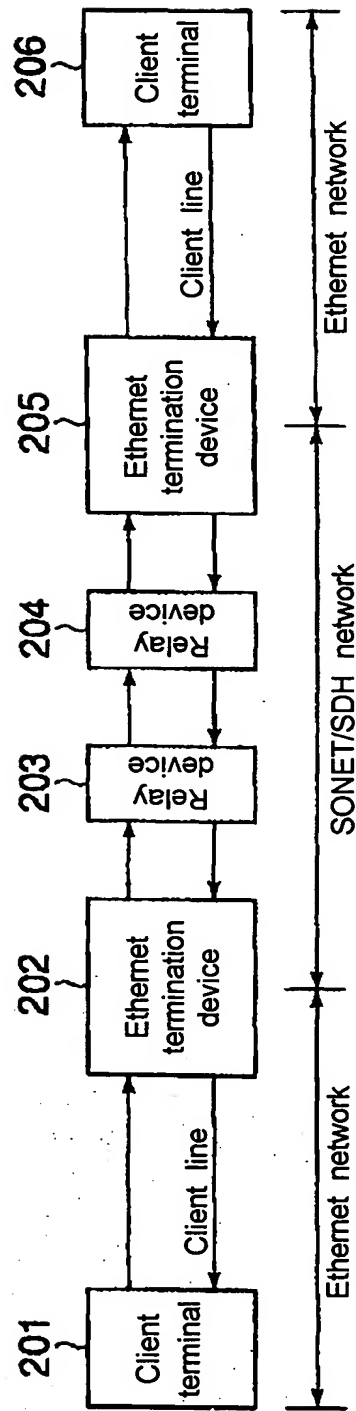


FIG. 2 (BACKGROUND ART)

FIG. 3A

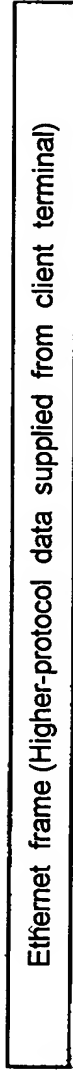


FIG. 3B

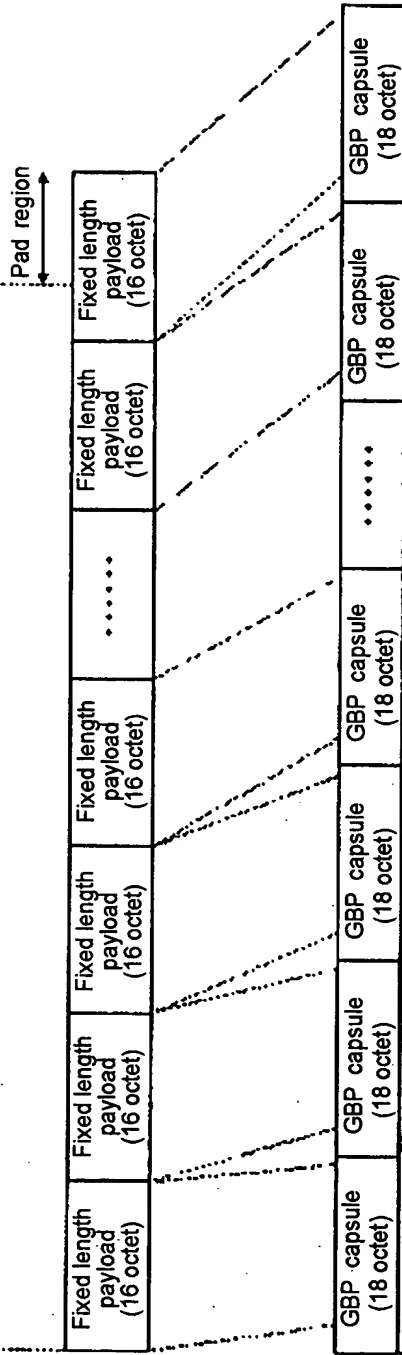


FIG. 3C

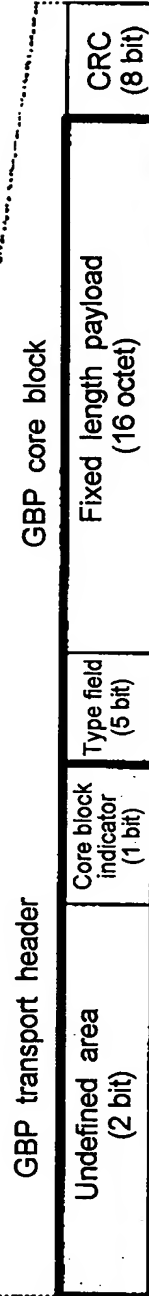


FIG. 3D

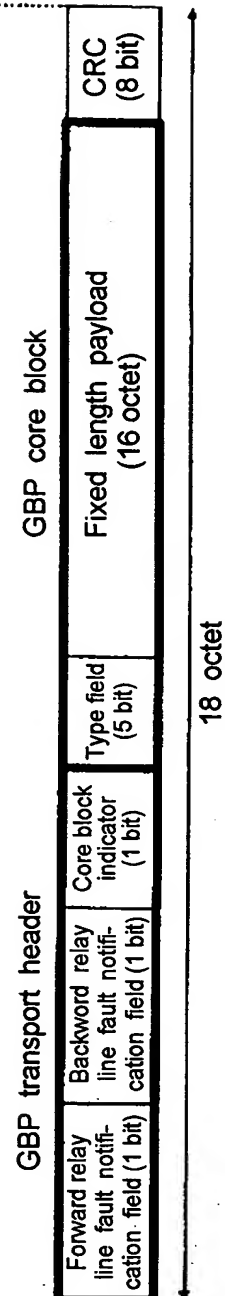
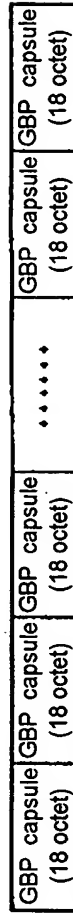


FIG. 3E

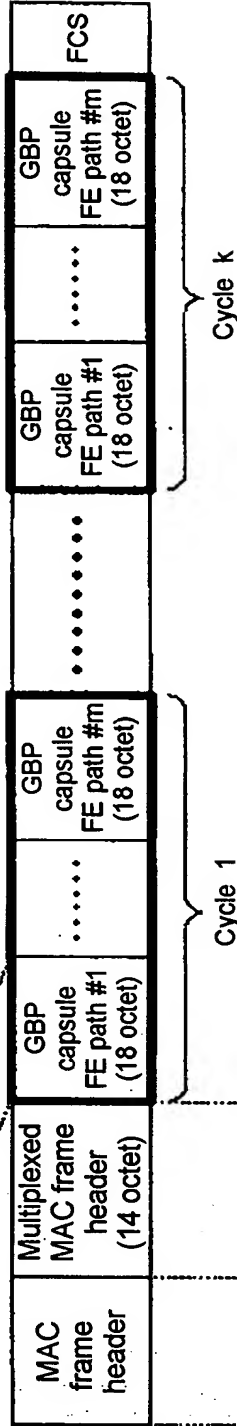
Fast Ethernet
path #1

FIG. 4A



Multiplexed
MAC frame

FIG. 4B



Multiplexed MAC
frame header

FIG. 4C

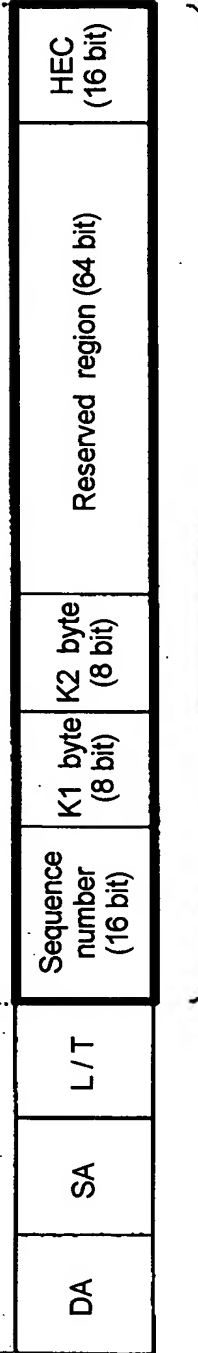
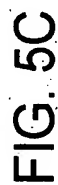


FIG. 5A

FIG. 5B

9 lines



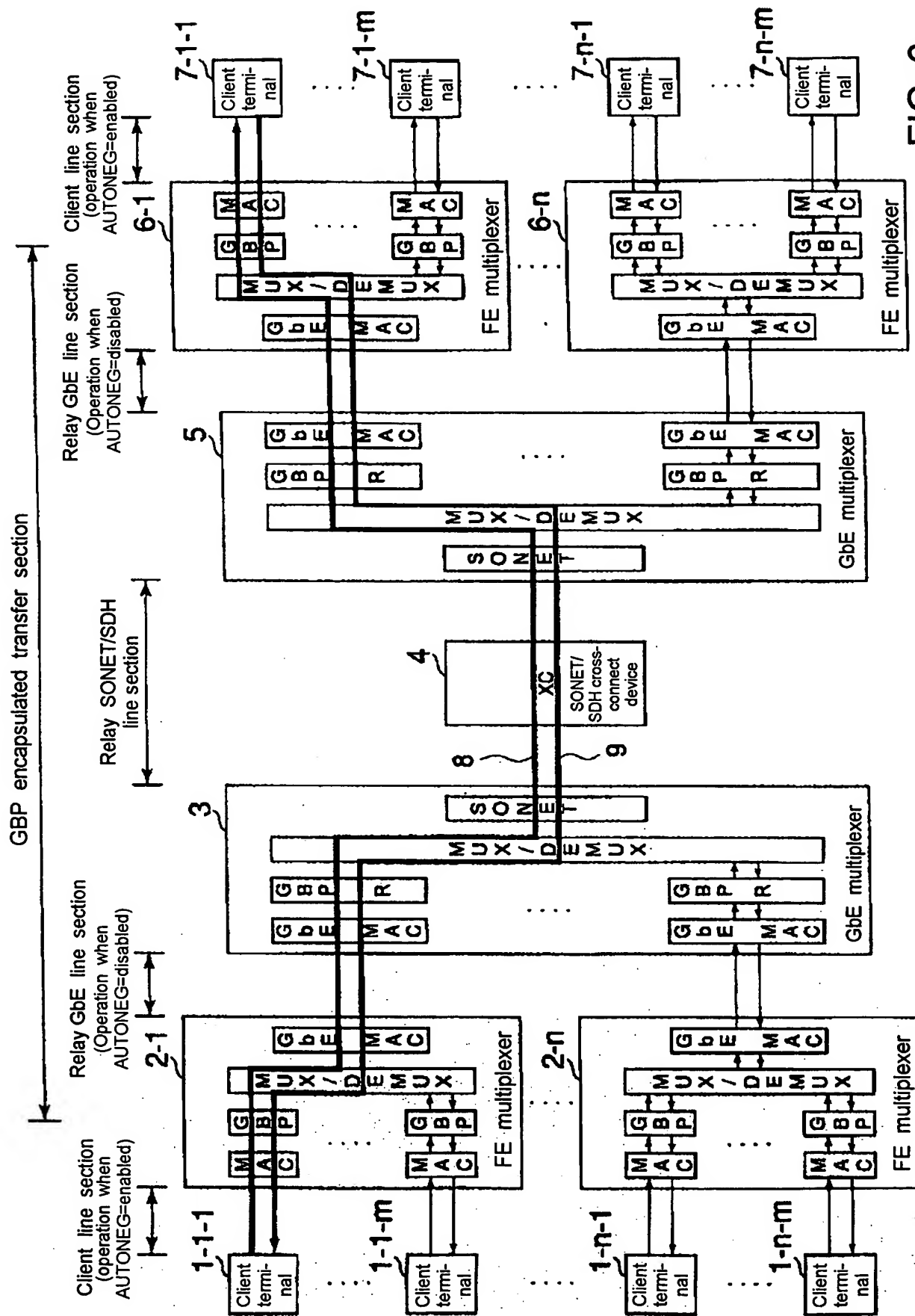


FIG. 6

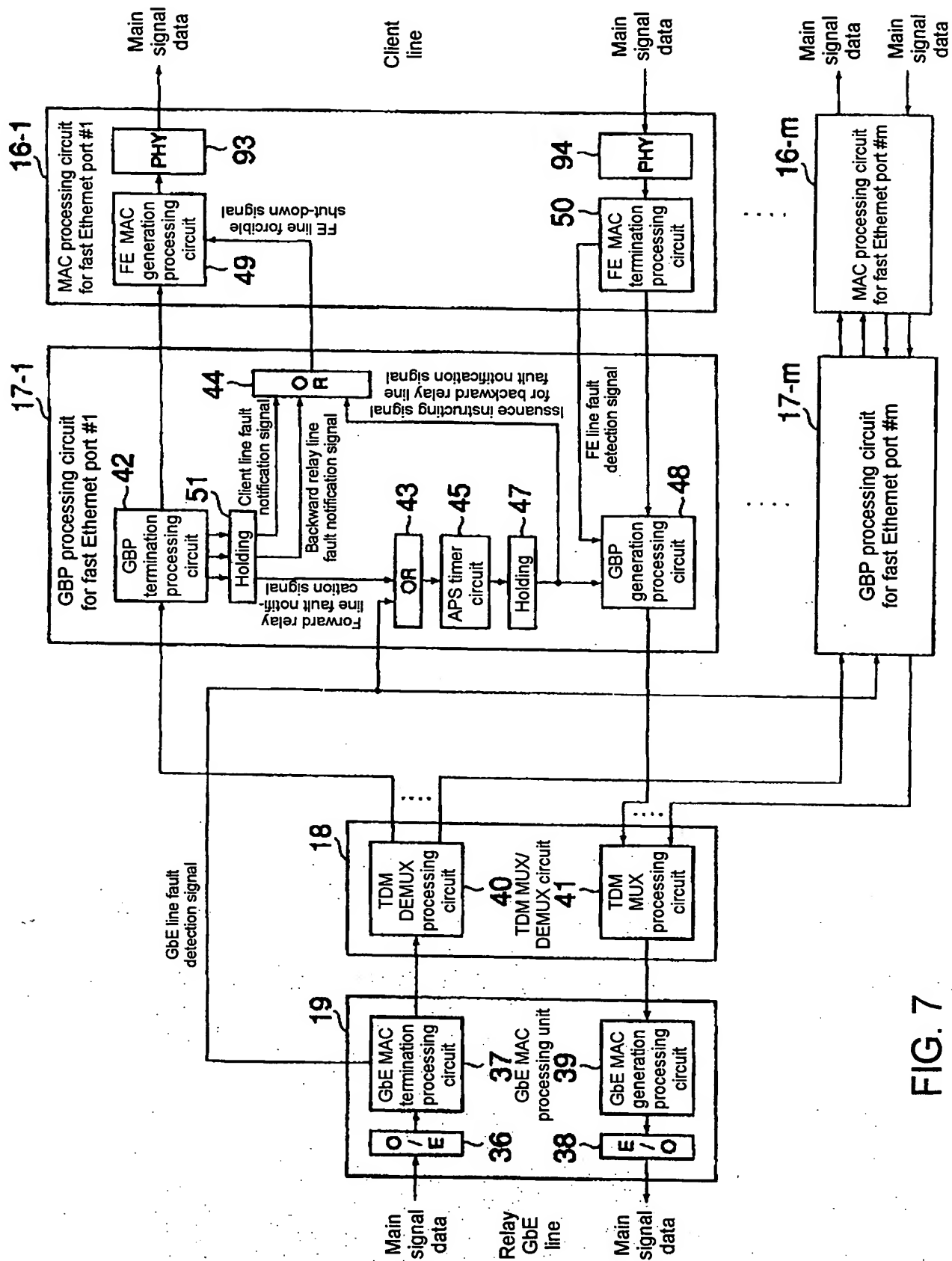


FIG. 7

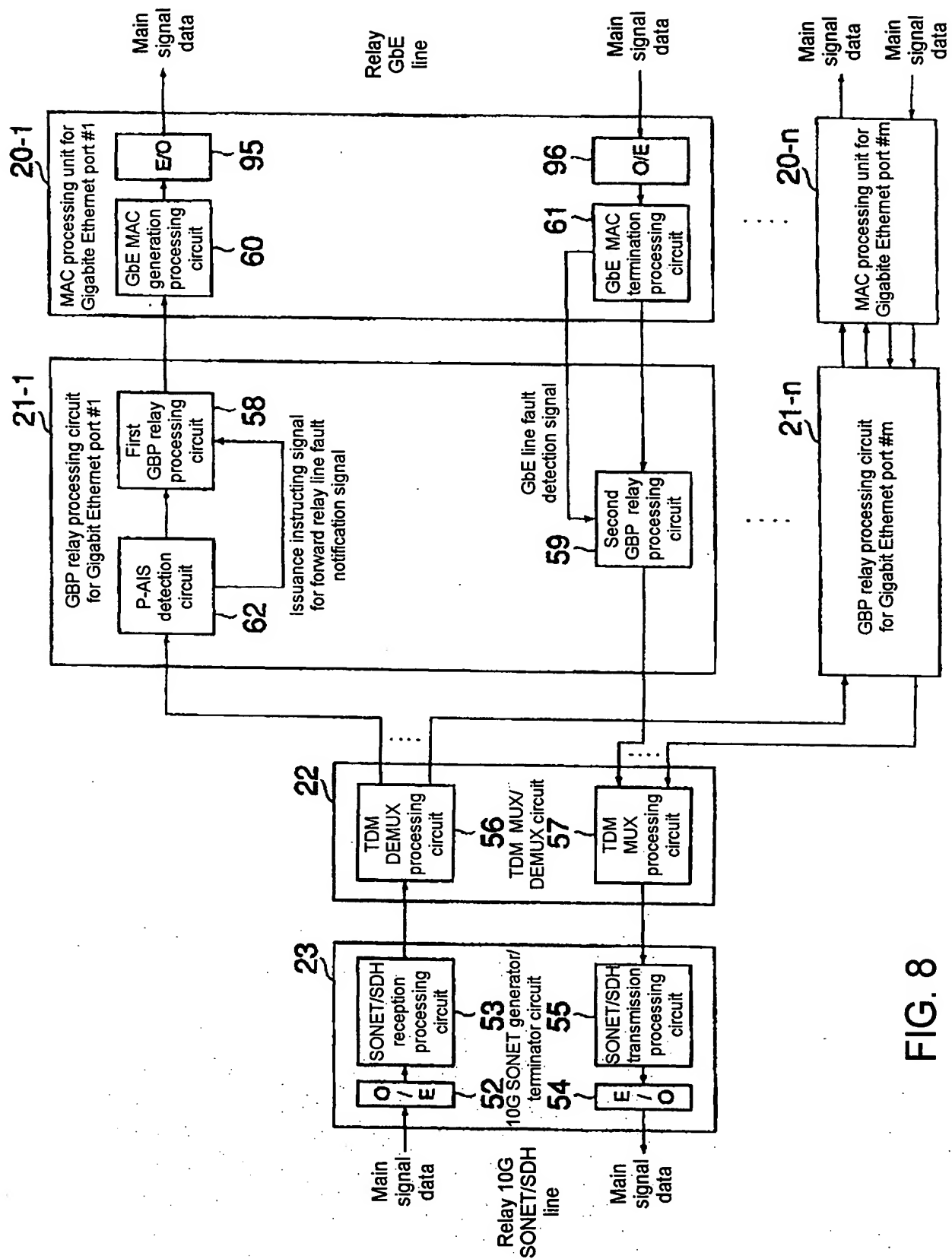


FIG. 8

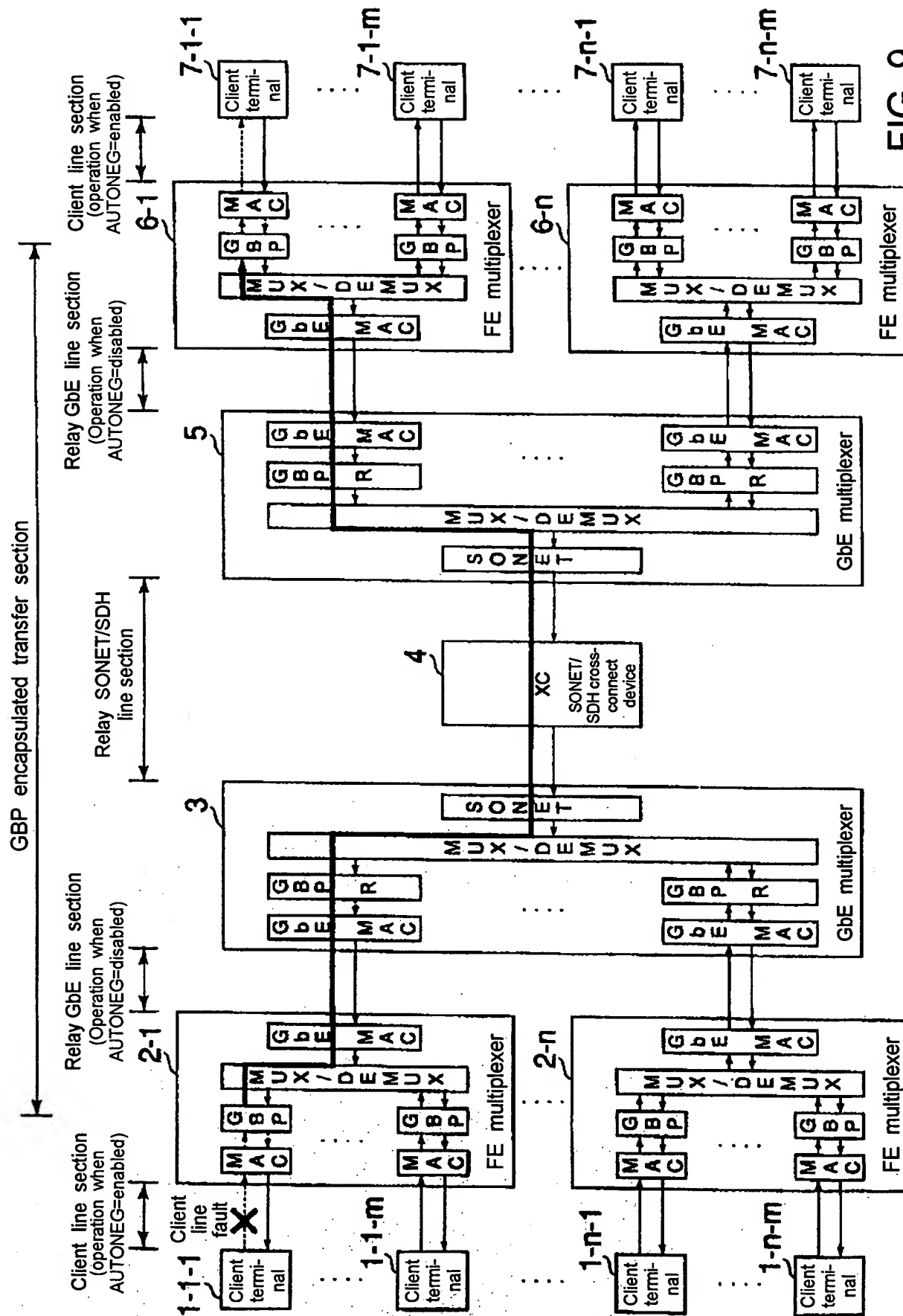


FIG. 9

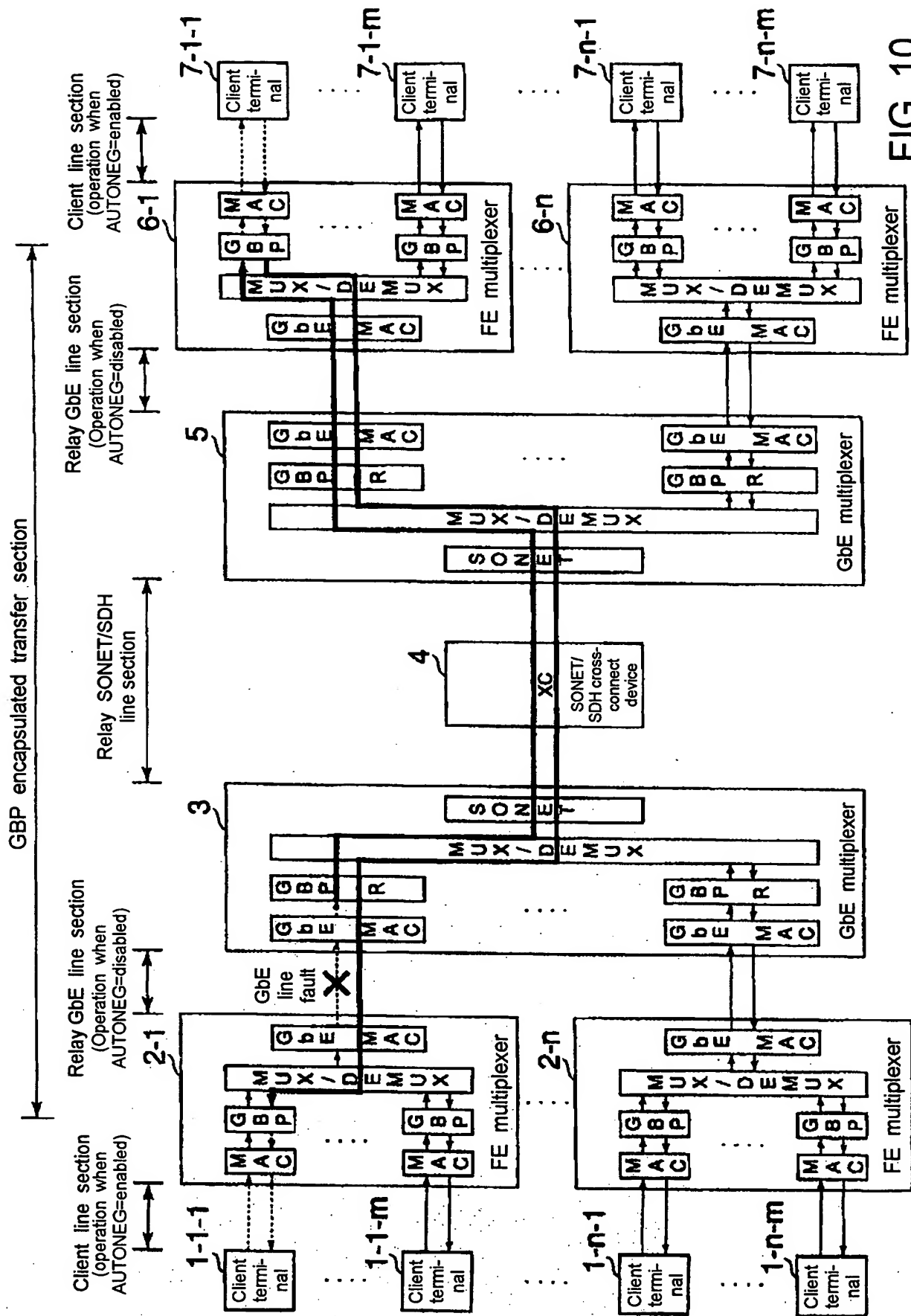


FIG. 10

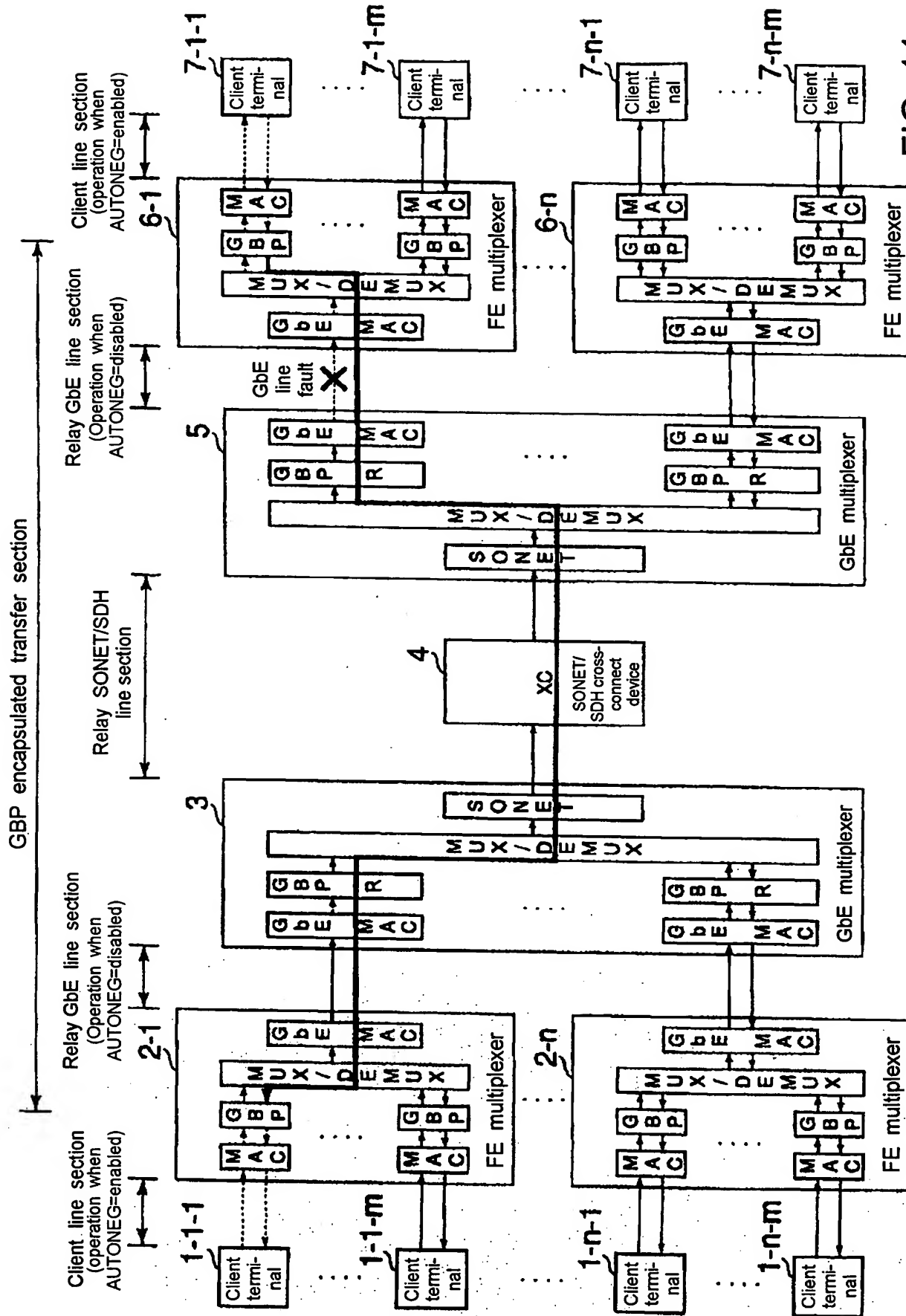


FIG. 11

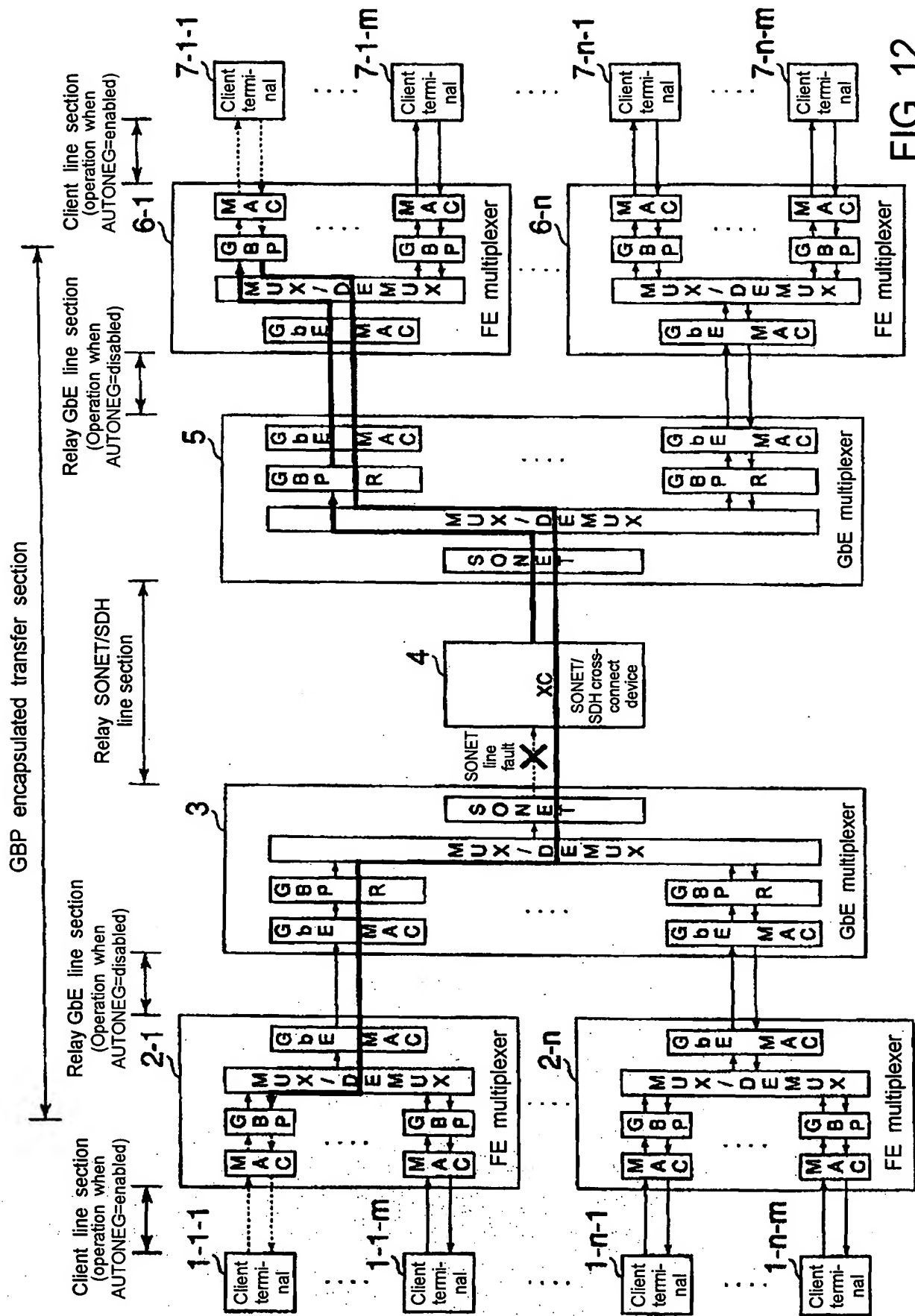


FIG. 12

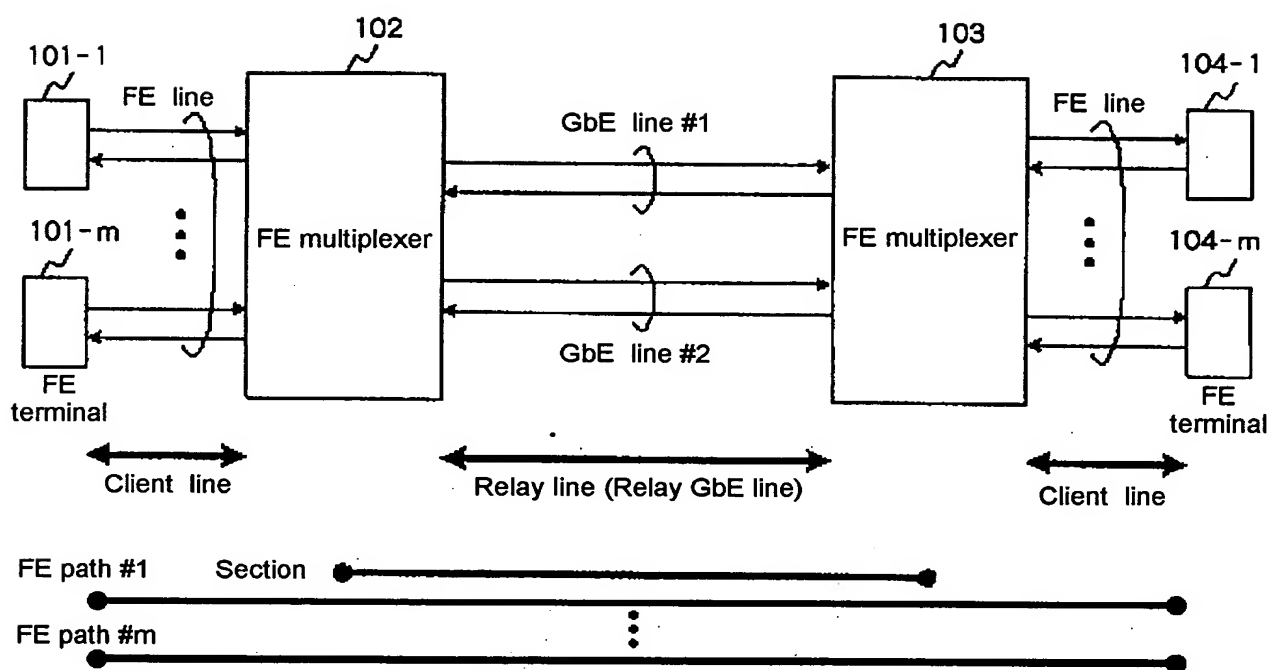


FIG. 13

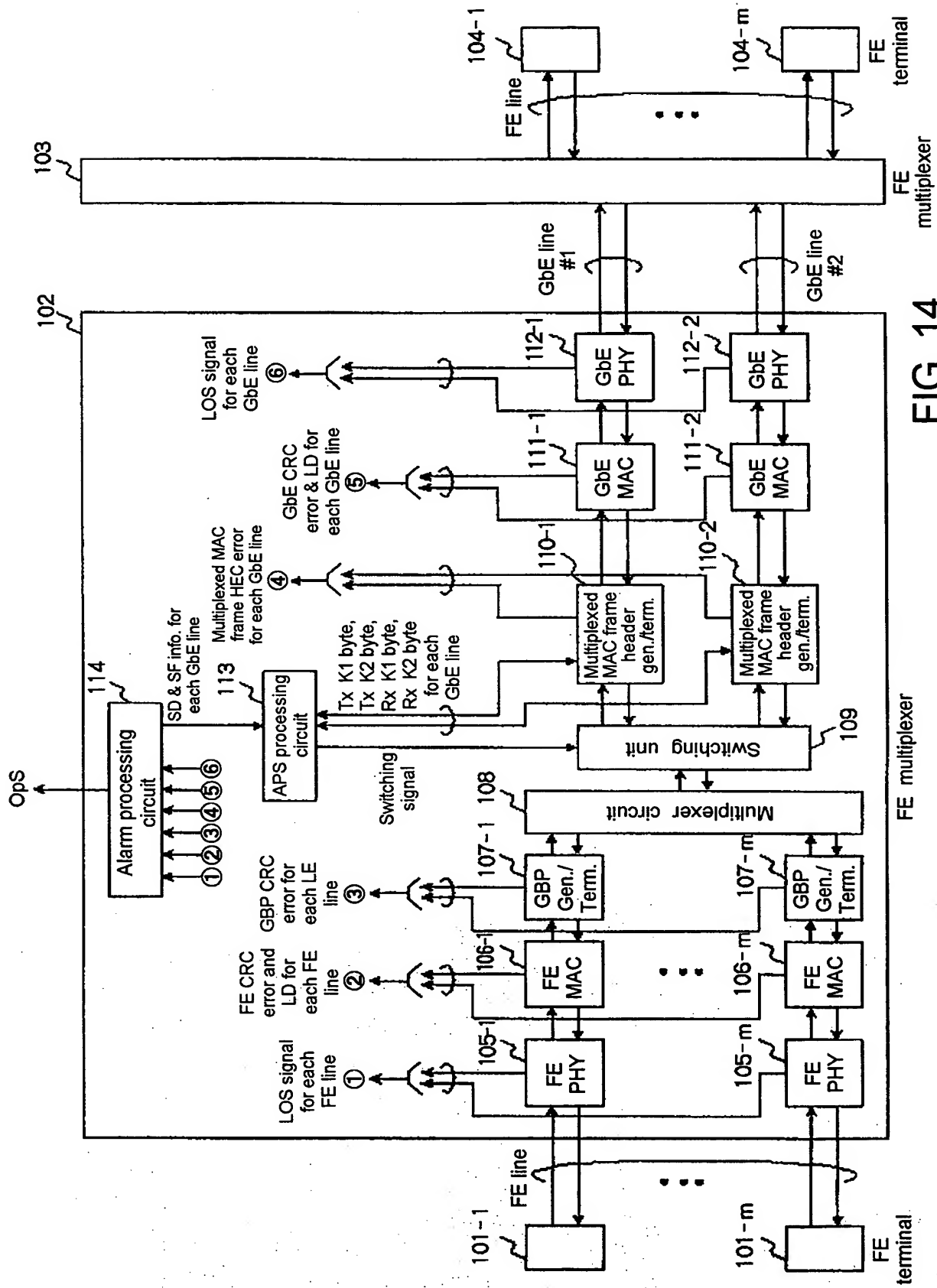


FIG. 14

Content	Detecting condition	Releasing condition	Unit of detection	Remarks	Judgment for switching
Interruption of FE input	Interruption of FE signal input	Recovery of FE signal input	Each FE path	-	-
FE link-down	Detection of FE link-down	Recovery from FE link-down	Each FE path	-	-
Abnormal multiplexed reception	Detection of "1" in forward relay line fault notification in GBP transport header of GBP capsule	Detection of "0" in forward relay line fault notification in GBP transport header of GBP capsule for a fixed time period	Each FE path	Corresponding to path AIS of SDH (HP-AIS)	-
Error in multiplexed reception data	Detection of CRC error in GBP capsule	No detection of CRC error in GBP capsule	Each FE path	Corresponding to B3 error of SDH (HP-BIP error)	-
Interruption of opposing side link	Detection of "1" in client line fault notification in type field of GBP core block of GBP capsule	Detection of "0" in client line fault notification in type field of GBP core block of GBP capsule	Each FE path	-	-
Abnormal transmission path	Detection of "1" in backward relay line fault notification in GBP transport header of GBP capsule	Detection of "0" in backward relay line fault notification in GBP transport header of GBP capsule	Each FE path	Corresponding to path RDI of SDH (HP-RDI)	-
GBP capsule SD	CRC error rate of GBP capsule is in range of 10e-3 to 10e-6	Release when value is at 1/10 of error rate previously set	Each FE path	Corresponding to deterioration in B3 error rate of SDH (P-SD)	-
Deterioration in error rate of GbE	GbE multiplexed reception error rate is in range of 10e-3 to 10e-7	Release when value is at 1/10 of error rate previously set	Each GbE line (Each section)	Corresponding to deterioration in B2 error rate of SDH (SD)	SD
Data error in GbE multiplexed reception	Detection of FCS error of GbE or detection of multiplexed MAC frame header HEC error	No detection of FCS error of GbE or no detection of multiplexed MAC frame header HEC error	Each GbE line (Each section)	Corresponding to B2 error of SDH (MS-BIP error)	SF
Abnormal APS byte	K1 & K2 do not coincide for consecutive three times for a fixed period or K1 includes undefined pattern	Recovery from the detection condition listed left	Each GbE line (Each section)	Corresponding to PSBF of SDH	SF
Interruption of GbE optical input	Interruption of GbE optical input	Recovery of GbE optical input	Each GbE line (Each section)	Corresponding to LOS of SDH	SF
GbE link-down	Detection of GbE link-down	Recovery from GbE link-down	Each GbE line (Each section)	Corresponding to LOS of SDH	SF

FIG. 15

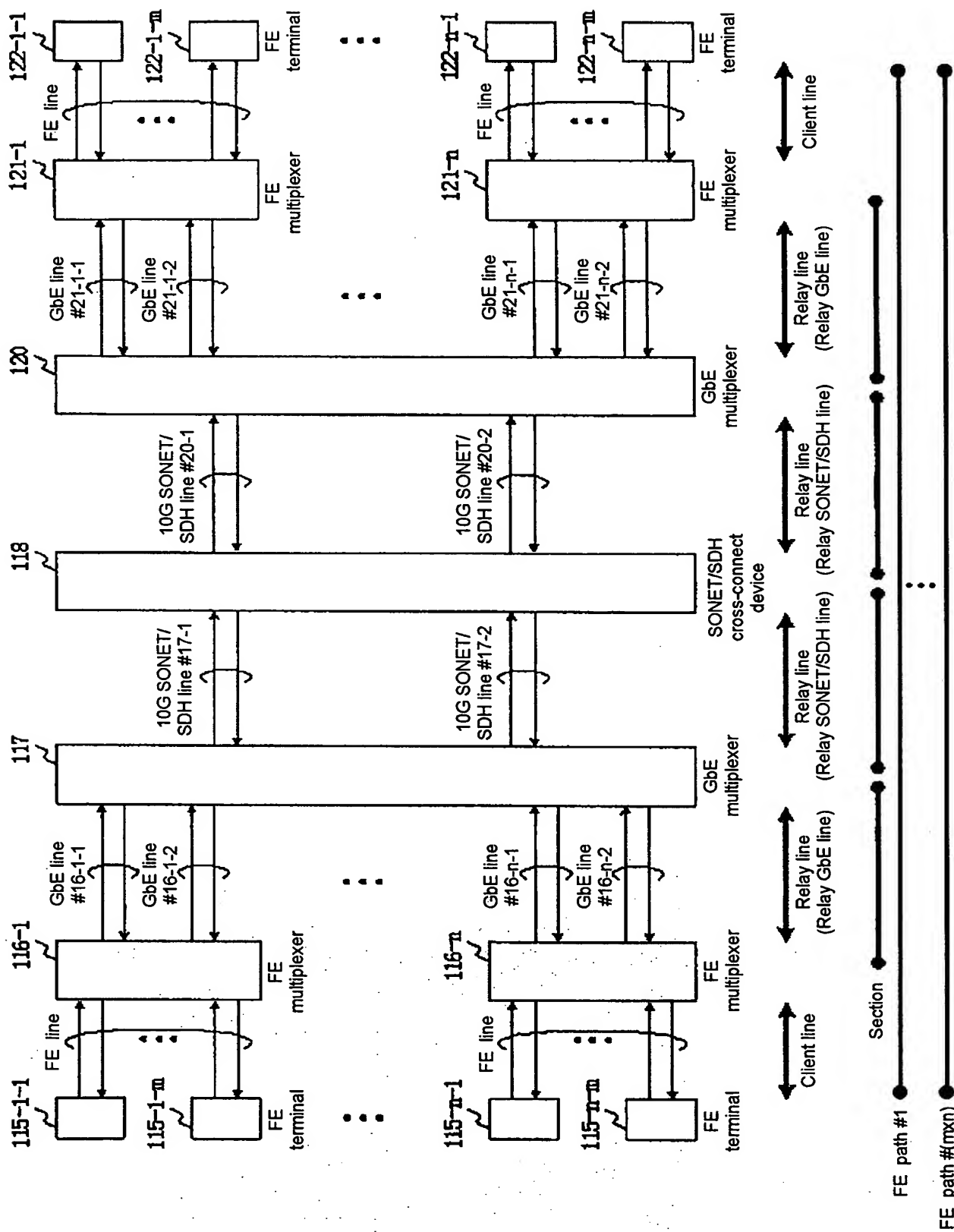


FIG. 16

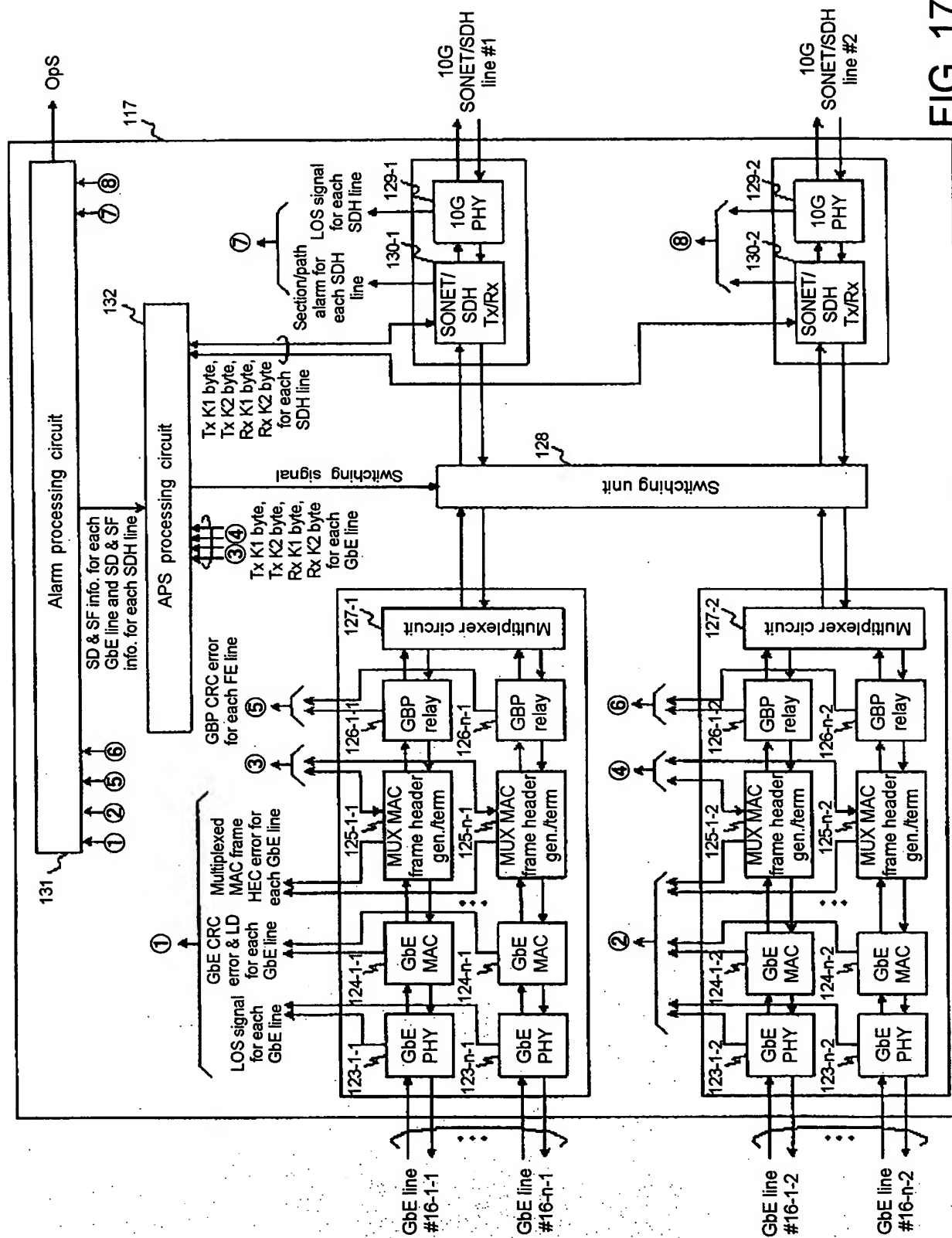


FIG. 17

Content	Detecting condition	Releasing condition	Unit of detection	Remarks	Judgment for switching
Interruption of GbE optical input	Interruption of GbE optical input	Recovery of GbE optical input	Each GbE line (Each section)	Corresponding to LOS of SDH	SF
GbE link-down	Detection of GbE link-down	Recovery from GbE link-down	Each GbE line (Each section)	Corresponding to LOS of SDH	SF
Abnormal multiplexed reception	H1/H2 bytes of VC-4 are all "1" for consecutive three frames	H1/H2 bytes of VC-4 are not all "1" (No protection)			
Abnormal multiplexed reception (Monitor)	Detection of "1" in forward relay line fault notification in GBP transport header of GBP capsule	Detection of "0" in forward relay line fault notification in GBP transport header of GBP capsule for a fixed time period	Each FE path	Corresponding to monitoring path AIS of SDH (HP-AIS)	-
Error in multiplexed reception data (Monitor)	Detection of CRC error in GBP capsule	No detection of CRC error in GBP capsule	Each FE path	Corresponding to monitoring B3 error of SDH (HP-BIP error)	-
Interruption of opposing side link (Monitor)	Detection of "1" in client line fault notification in type field of GBP core block of GBP capsule	Detection of "0" in client line fault notification in type field of GBP core block of GBP capsule	Each FE path	-	-
Abnormal transmission path (Monitor)	Detection of "1" in backward relay line fault notification in GBP transport header of GBP capsule	Detection of "0" in backward relay line fault notification in GBP transport header of GBP capsule	Each FE path	Corresponding to monitoring path RDI of SDH (HP-RDI)	-
GBP capsule SD (Monitor)	CRC error rate of GBP capsule is in range of 10e-3 to 10e-6	Release when value is at 1/10 of error rate previously set	Each FE path	Corresponding to monitoring deterioration in B3 error rate of SDH (P-SD)	-
Deterioration in error rate in GbE	GbE multiplexed reception error rate is in range of 10e-3 to 10e-7	Release when value is at 1/10 of error rate previously set	Each GbE line (Each section)	Corresponding to deterioration in B2 error rate of SDH (SD)	SD
Data error in GbE multiplexed reception	Detection of FCS error of GbE or detection of multiplexed MAC frame header HEC error	No detection of FCS error of GbE or no detection of multiplexed MAC frame header HEC error	Each GbE line (Each section)	Corresponding to B2 error of SDH (MS-BIP error)	SF
Abnormal APS byte	K1 & K2 do not coincide for consecutive three times for a fixed period or K1 includes undefined pattern	Recovery from the detection condition listed left	Each GbE line, each SDH line (Each section)		SF
SDH path alarm	Depending on detection condition of each POH byte error	Depending on releasing condition of each POH byte error	Each FE path		SF
SDH section alarm	Depending on detection condition of each SOH byte error	Depending on releasing condition of each SOH byte error	Each SDH line (Each section)		SF (SD for B2 error rate deterioration)
Interrupt of SDH optical input	Interrupt of optical input	Recovery of optical input	Each SDH line (Each section)		SF

FIG. 18